

INTERNATIONAL SURVEY ON LAND SUBSIDENCE

A. LOCATION OF SUBSIDENCE

A1. Country:		A2. Nearest City:	
A3. District or Province:			
A4. Latitude:		N S	A5. Longitude: E W
A6. Elevation, above or below sea level, in metres:			
A7. Sketch map (show scale):			

B. PROBABLE CAUSE OF SUBSIDENCE

<p>(Check one or more)</p> <p>Fluid withdrawal: water ____, oil ____, gas ____, brine ____, geothermal ____, other _____;</p> <p>Application of water (hydrocompaction) _____;</p> <p>Dewatering of organic soils _____; Loading by engineering structures _____;</p> <p>Mining _____; Solution of subsurface materials (salt, etc.) _____; Karst collapse _____;</p> <p>Geologic loading _____; Tectonic deformation _____; Volcanic activity _____.</p>

C. SUBSIDENCE DETAILS

C1. Date subsidence started:
C2. Date subsidence first reported:
C3. Current conditions: Subsidence stopped ____, date: ____; continuing at the same rate ____; continuing at increasing rate ____; continuing at decreasing rate ____.
C4. Area of subsidence, in km ²
C5. Maximum amount of subsidence, in metres: ____; average subsidence, in metres:
C6. Maximum subsidence rate in cm/yr: _____ Year _____

D. DESCRIPTION OF SUBSIDENCE AREA

D1. Land use (check item): Industrial ____; Agricultural ____; Business and Residential ____; Mining ____, what kind? ____; other ____, describe:
D2. Geologic setting (give depth range of extraction and physical character of deposits tapped):
D3. Hydrologic setting (including aquifers or aquifer systems):
D4. Soil-mechanics properties:
D5. Resources withdrawn in or near subsiding area: water ____; oil ____; gas ____; coal ____; other_ ____; describe:
D6. Quantity of resources withdrawn, in m ³ /year: during years _____ to _____.

E. OBSERVATION AND MEASUREMENT

E1. Monitoring is done continuously ____; periodically ____, if periodically, frequency
E2. Subsidence is (1) recorded by instrument ____, or (2) reported _____, to an accuracy of _____ cm/year.
E3. Describe instrumentation:

F. EFFECTS OF SUBSIDENCE

F1. Damage has been: severe ____; moderate ____; none known ____; Describe:
F2. Damage has been to (check items): buildings ____, other structures ____, pipelines ____, airports, highways, and railroads ____; dikes, levees, and flood walls ____; canals and river systems ____; drains ____; other _____.
F3. Estimated cost of damage:
F4. Have countermeasures been taken to reduce or stop subsidence? Yes ____, No ____.
F5. Briefly describe those countermeasures:
F6. What construction has been necessary to counteract the effects of subsidence?
F7. Cost estimate for countermeasures:
F8. Predicted maximum future subsidence, in metres: _____. Predicted future extent of subsidence, on km ² : _____. Predicted future rate of subsidence, in cm/yr: _____.

Give author, year, title, publications, pages (use additional pages if needed).

H. RESPONDENT

(Please print of type)

Name:		Title:	
Address:			
City:	State:	Postal Zone	Country:
Signature:			Date:

Completed Questionnaires should be sent to:

International Survey on Land Subsidence
U.S. Geological Survey, MS 470
Menlo Park, California 94025, USA